

U.S.S.N. 09/219,288  
Confirmation No. 1977  
Filed: December 22, 1998  
Group Art Unit: 1743  
Examiner: L. Alexander  
Attorney Docket No. 101324-54

## REMARKS

Claims 25 - 44 are pending in this application. This application is currently undergoing "continued examination." At this stage, there is only one remaining ground for rejection, a newly cited reference brought to the USPTO's attention by the Applicant in a recently submitted Supplemental Information Disclosure Statement. No amendments are presented because it is believed that the current claim language already fully distinguishes this prior art reference. Reconsideration and allowance are requested in view of the following remarks.

Applicants' pending claims are drawn to an apparatus for *identification of a marked liquid*. The apparatus includes a detector and a concentration pattern comparison element. The apparatus performs an analysis on liquids which include *at least two markers*, wherein each of the markers is miscible with the liquid and wherein each of the markers has a *unique optical detection spectrum* that is differentiable from the spectra of the liquid and any other marker in the liquid. The *concentrations of the markers are preselected* to identify the liquid, such that a *set of concentration patterns* is predefined.

In the claimed apparatus, the detector identifies the markers by their respective absorption spectra and *generates signals indicative of relative concentrations of the markers* in the liquid.

The pattern comparison element then compares the signals from the detector (e.g., the measured concentrations of a first and second markers) with a *look up table* of the *predetermined concentration patterns* to identify the liquid.

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In one preferred embodiment, the invention is useful in identifying the source (or tax status) of petroleum products. The liquid petroleum is marked by adding at least a first marker and a second marker, each of which has an unique detection spectrum that is differentiable from that of the liquid and any other marker in the liquid. The markers are added in predefined amounts such that the ratio of the concentration of the first marker to the concentration of the second marker substantially equals a predetermined value. The apparatus detected this value (e.g. a concentration pattern) and compares the measured value with a look-up table of known patterns to identify the liquid. The invention not only permits precise identification of petroleum products but does so without the need for a large number of distinct markers. By utilizing a "code" of *relative concentrations*, a large number of unique signatures can be established with a small set of markers.

#### ***Prior Art Rejection***

There is only one remaining basis for rejection. All of the claims stand rejected as either anticipated under 35 U.S.C. 102 or obvious under 35 U.S.C. 103 in view of published International Patent Application No. WO 94/12874. Applicants respectfully disagree.

PCT Pub. No. WO 94/12874 merely discloses a class of infrared fluorescent markers for petroleum products (similar to those described in the background section of the present application). The drawings of the reference disclose a rudimentary detection scheme but it neither teaches nor suggests Applicants' apparatus. In particular, there is no teaching of a "pattern comparison element" for comparing a measured concentration pattern of at least two markers with known concentration patterns of identified liquids. There is likewise no teaching of a look-up table of known concentration patterns ("codes") to identify a marked liquid.

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### CONCLUSION

Reconsideration is requested. If the Examiner believes that an interview would facilitate the resolution of any outstanding issues, he is kindly requested to contact the undersigned.

Respectfully submitted,

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